

## TRAFFIC DESIGN INFORMATION

*Note: These instructions are based on the assumption that the drafter has had some Microstation training. It is recommended that the drafter read through the documentation first before attempting any of the procedures. These directions are just one way of accomplishing these tasks and are not necessarily the only way to represent our final product.*

All traffic project plan sheets are to be drawn in 3-D. The plan sheet border located at U:\rd\Bentley\V8i\MicroStation\bdr\English\plan.bdr is referenced into the individual xxx.dgns. When plans are sent to Bid Letting, Not For Construction is to be removed.

All cells placed on traffic plan sheets should be at a scale 1:1.

New items on the plan sheets are solid (line style 0) and existing items are dashed (line style 1).

All plan sheets should use a scale of 1" = 40'.

Stationing, street names, and dimension style should be color 5 (blue), Arial font, style 0, weight 1 and text size 3.6 with open arrowheads. There are cells for sheet headings (signal layout, conduit layout, wiring diagram, etc.) in c:\dot\rd\cel\tr.cel. The sheet subheadings (intersection or roadway name) should be color 10 (gray), Arial font, style 0, weight 1 and text size 8.

### TITLE SHEET – titleL.dgn, titleM.dgn

Using Windows Explorer in U:\rd\prj\COUNPCN#\, copy and paste titleB.dgn and name to the following naming convention; titleL.dgn for signal and lighting plans or titleM.dgn for pavement marking plans. Edit the file as needed to include Section L or Section M.

A title sheet can also be created by following the directions to “Creating a Title Sheet” in <https://dotfiles.sd.gov/cadd/CADD-Drafting.pdf>.

### TRAFFIC DRAFTER DESIGN FILE – fPCN.dgn

The traffic drafter design file is fPCN.dgn. The fPCN.dgn file has the following reference files attached with these levels to be left on:

cgPCN.dgn	.....	19,20,30
dPCN.dgn	.....	1,2,17,30
rPCN.dgn	.....	25,27,37
tPCN.dgn	.....	7,11-15,21,25,33,35,40-44,46-50,52,54,55,58,59
yPCN.dgn	.....	36,39

### TRAFFIC ENGINEER DESIGN FILE – yPCN.dgn

The traffic engineer design file is yPCN.dgn.

## SIGNAL LAYOUT – STAes.dgn, STAs.dgn

The signal layout illustrates the placement of signals at an intersection. The signal layout consists of signal poles, mast arms, and vehicle signal heads. Luminaires, luminaire extensions, emergency vehicle preemption units, pedestrian heads, signs, and buttons are also included, if applicable.

Signal poles and luminaire poles are placed in the fPCN.dgn.

The signal layouts are named STAes.dgn for existing signal layouts and STAs.dgn for new signal layouts. STA is the nearest even stationing in the center of the intersection. For example, if an intersection starts at Station 3+00 for a new signal layout, it would be named 003s.dgn.

The existing signal and signal layouts are plotted in color.

When a survey has been done for the project, the following files need to be referenced into the signal layouts with these levels to be left on:

cgPCN.dgn	.....	19,20,30
dPCN.dgn	.....	1,2,17
fPCN.dgn	.....	36,37,39,55
rPCN.dgn	.....	25,27
tPCN.dgn	.....	7,11,13-15,21,35,49,50,52,54,55

All new items shown on the signal layouts are listed in the estimate of quantities table on the signal layout sheet. If existing items will be salvaged and/or relocated, a table of existing items and/or relocate signal equipment will also need to be shown on the signal layout sheet. And the existing signal layout will need a salvage & remove signal equipment table and an estimate of quantities table.

Everything is drawn on level 38 in the signal layouts. All cells are on level 38 and level 40. All items found on the signal layouts are cells located in the *tr.cel* library (c:\dot\rd\cell\tr.cel).

Pedestrian heads, signs, and buttons are located below the signal head mounted on the pole. It is important to show the pedestrian sign and button on the side of the pole the pedestrian will stand to press the button.

Each existing signal pole must be labeled. Existing signal heads must be numbered when they will be reused or relocated. Each new signal pole needs to be labeled and stationed. Every new signal head must be numbered. The distance along the mast arms between signal heads needs to be dimensioned on new signal layouts. Stationing, ROW lines, street names, a north arrow and scale must also be included on the new signal layout.

## CONDUIT LAYOUT – STAc.dgn

The conduit layout is a diagram of the service connections necessary to operate the signals and can contain the placement of luminaires. The conduit layout includes location of signal pole footings, junction boxes, detector loops, conduit and cable, the service cabinet, utility poles, meters, the controller, a table of estimated quantities, and a table of existing items if needed.

Signal poles, junction boxes, conduit, service cabinets, utility poles, meters, and controllers are placed in the fPCN.dgn.

Conduit is drawn on level 38 using color 101 (aqua), style 0 or 1, and a weight of 4. Secondary conduit is drawn on level 43 using color 101 (aqua), style 0 or 1, and a weight of 4.

The conduit layout is named STAc.dgn. In the event of a signalized intersection, STA is the nearest even stationing in the center of the intersection. For example, if an intersection starts at Station 3+00 for a conduit layout, it would be named 003c.dgn. In the occurrence of no signalized intersections, STA is the nearest even stationing at the beginning of the plan sheet. For example, if a plan sheet begins at Station 2+00, it would be named 002c.dgn.

When a survey has been done for the project, the following files need to be referenced into the conduit layouts with these levels to be left on:

cgPCN.dgn	.....	19,20,30
dPCN.dgn	.....	1,2,17,30
fPCN.dgn	.....	36,38-44
rPCN.dgn	.....	25,27
tPCN.dgn	.....	7,11-15,21,25,33,35,40-44,46-50,52,54,55

All items found on the conduit layout are cells located in the *tr.cell* library (c:\dot\rd\cell\tr.cell).

Inroads can be used to label station/offset of poles in Conduit and Signal Layouts.

- Open Inroads
  - Open fPCN.alg
  - From the Geometry drop down select View Geometry>Station Offset Annotation.
  - Click Preferences
    - Select Traffic
    - Load
    - Close
  - Select Horizontal Alignment
  - Select Luminaire, Signal or Push Button Pole to label.
    - Apply

## **WIRING DIAGRAM –STAbegin-STAendw.dgn**

The wiring diagrams illustrate the route of each cable through the junction boxes, luminaire poles, power source and service cabinet.

The wiring diagrams for lighting are named STAbegin-STAendw.dgn. STAbegin is the nearest even stationing at the beginning of the plan sheet and STAend is the nearest even stationing at the end of the plan sheet. For example, if the plan sheet begins at Station 3+00 and end at Station 9+00, it would be named 003009w.dgn.

The wiring diagrams for lighting are plotted in black and white. All items found on the wiring diagram for lighting are cells located in the *wiring.cel* library (c:\dot\rd\cell\wiring.cell).

The wiring diagram for lighting will also indicate who is supplying the power, the type of power, fuse sizes and luminaire descriptions.

## **WIRING TABLES –WiringTables.dgn**

The wiring tables indicate pole numbers, cable size, cabinet terminal, cable conductor number, cable conductor color, pole conductor color, head terminal, head number and phase number.

The wiring tables for signals will also indicate who is supplying the power, the type of power, fuse sizes and luminaire extension descriptions.

## **SIGNAL TIMING – STAtime.dgn**

The signal timing plan sheets illustrate the signal indication for each interval of the cycle.

The signal timing plan sheets are named STAtime.dgn. STA is the nearest even stationing in the center of the intersection. For example, if an intersection starts at Station 3+00 for a signal timing plan sheet, it would be named 003time.dgn.

The signal timing plan sheets are plotted in black and white.

## **PAVEMENT MARKING LAYOUTS – STApm.dgn**

The pavement marking layouts indicate how the road is to be striped.

The pavement marking layouts are named STApm.dgn. STA is the nearest even stationing of the beginning of the plan sheet, for example, if a plan sheet starts at Station 3+00 for a pavement marking layout, it would be named 003pm.dgn.

Pavement marking layouts are plotted in black and white.

All the pavement marking cells are located in the *marking.cel* library (c:\dot\rd\cell\marking.cel).

All pavement markings are placed in the fPCN.dgn and referenced into the STApm.dgn. They are drawn on either level 54 and level 55 using color 8 (light gray) and color 20 (yellow), a weight of 4, and a style of 0. Level 54 is for interstate markings and 55 is for all others.

When a survey has been done for the project the following files are referenced into the pavement marking layouts with these levels to be turned on:

cgPCN.dgn	.....	19
dPCN.dgn	.....	2,17
fPCN.dgn	.....	54,55
tPCN.dgn	.....	35

A table of quantities must be included on the first sheet of the pavement marking layouts. Stationing, street names, a north arrow and scale must also be included on all the pavement marking layout sheets.

Inroads can be used to label station/offset of pavement markings in Pavement Marking Layouts.

- Open Inroads
  - Open fPCN.alg
  - From Tools drop down select Tracking>Tracking.
  - Click Settings
  - Click Preferences
    - Select Traffic
    - Load
    - Close